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14. A system, comprising:
 a computing device configured to generate an immersive
 virtual environment, the computing device including a
 memory storing executable instructions, and a proces-
 sor configured to execute the instructions to cause the
 computing device to:
 generate a virtual environment for display in a head-
 mounted display device, the virtual environment
 displaying at least one three-dimensional virtual
 object with a plurality of volumetric zones config-
 ured to receive virtual contact;
 detect, a plurality of inputs corresponding to a plurality
 of actions performed in the virtual environment on
 the at least one three-dimensional virtual object, each
 action corresponding to a plurality of positions and
 orientations associated with a portion of at least one
 tracked input device;
 generate, for each action and while detecting the plu-
 rality of inputs, a plurality of prediction models, at
 least one of the plurality of prediction models includ-
 ing a trajectory and a probability of virtual collision
 of the portion of the at least one tracked input device
 with at least one of the plurality of volumetric zones;
 determine, based on the plurality of prediction models,
 in which of the plurality of volumetric zones the
 portion of the at least one tracked input device is
 predicted to virtually collide; and
 for each action,
 match at least one prediction model from the plural-
 ity of prediction models to a tracked trajectory
 corresponding to a virtual contact between the
 portion of the at least one tracked input device and
 at least one of the plurality of volumetric zones,
 the tracked trajectory including at least a back-
 swing and a downward arc,

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perform the respective action associated with the
 matched at least one prediction model; and
 provide output in a display in the head-mounted
 display device, the output including a textual
 character corresponding to the virtual contact in
 the at least one of the plurality of volumetric
 zones.

15. The system of claim 14, further comprising in
 response to determining a match does not exist between the
 at least one prediction model and the trajectory, suppressing
 performance of the action associated with the at least one
 prediction model.

16. The system of claim 14, further comprising suppress-
 ing performance of the action associated with the at least one
 prediction model based on determining that a velocity
 associated with the action is below a threshold velocity,
 wherein the threshold velocity is configured to detect a
 pressure associated with the action.

17. The system of claim 14, wherein determining which
 of the plurality of volumetric zones a portion of the at least
 one tracked input device contacts is based at least in part on
 the plurality of positions and orientations associated with the
 at least one tracked input device and a derived velocity
 associated with the at least one tracked input device.

18. The system of claim 14, wherein generating the
 plurality of prediction models includes processing the plu-
 rality of inputs that include, for each action, a heading, an
 angle, a course, and a derived velocity.

19. The system of claim 18, wherein the course comprises
 a trajectory and a contact zone corresponding to at least one
 of the plurality of volumetric zones.

20. The system of claim 18, wherein the plurality of
 actions are tracked in six degrees of freedom to determine a
 position and orientation associated with each action per-
 formed within the virtual environment.

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